

REMARKS

This amendment is submitted in reply to the Office Action dated February 21, 2007. Claims 13-16, 18-25 and 27-40 currently stand rejected. Applicants respectfully traverse. Newly added claim 41 has been added to further define patentable aspects of the invention. No new matter has been added by the amendment.

In light of the amendment and the remarks presented below, Applicants respectfully request reconsideration and allowance of all now-pending claims of the present application.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 13, 14, 18, 21, 25, 27-29 and 33-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Russell et al. (paper on "Measure of local speaking-rate for automatic speech recognition" published May 13, 1999, hereinafter "Russell") in view of Gandhi et al. (U.S. Patent No. 5,687,287, hereinafter "Gandhi"). Claims 15, 16, 19, 20, 22-24 and 30-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Russell in view of Gandhi in view of various combinations of James et al. ("A Fast Lattice-Based Approach to Vocabulary Independent Wordspotting", hereinafter "James"), Bergstrom, Gupta et al. (U.S. Patent No. 5,390,278, hereinafter "Gupta '278"), Gupta et al. (U.S. Patent No. 6,138,095, hereinafter "Gupta '095"), Ueyama et al. (U.S. Patent Application Publication No. 2001/0056346, hereinafter "Ueyama") and Schwartz et al. (U.S. Patent No. 5,621,859, hereinafter "Schwartz").

Independent claim 29 recites, *inter alia*, biasing the transition probabilities in dependence of the number of phonetic segments in a word.

The Office Action continues to assert that Russell inherently disclosed biasing the transition probabilities in dependence of the number of phonetic segments in an utterance at col. 1 of page 1 of Russell by virtue of the measurement of the rate of speaking by measuring phones-per-second. Applicants dispute this assertion. In this regard, Applicants respectfully note that, even if it were conceded that one must inherently determine a number of phones in an utterance in order to determine the rate of speech in phones-per-second, such a concession does not necessarily imply that any function performed on the basis of the rate of speech is performed also and inherently based on the number of phones in the utterance. For example, if ten phonetic

segments are spoken in an utterance that is five seconds in length, a rate of speech determination of such utterance would be two phones-per-second. Meanwhile, if two phonetic segments are spoken in an utterance that is one second in length, the rate of speech determination of such utterance would also be two phones-per-second. Thus, according to Russell, the utterance having ten phonetic segments would be identical to the utterance having two phonetic segments when used to "adapt the self-transition probabilities throughout an utterance" as disclosed by the third and fourth lines of the paragraph following Fig. 3 of Russell, since such adaptation in Russell is performed on the basis of rate of speech. Meanwhile, the claimed invention biases the transition probabilities in dependence of the number of phonetic segments in a word. Thus, the biasing for the utterance having ten phonetic segments would be different than the biasing for the utterance having two phonetic segments according to the claimed invention. Accordingly, Russell fails to inherently disclose biasing the transition probabilities in dependence of the number of phonetic segments in an utterance.

The Office Action cites Russell as disclosing the above recited feature except that Russell operates at a sentence level. As such, the Office Action admits that Russell fails to operate at the word level as provided in the claimed invention. However, not only does Russell fall short with respect to disclosing a dependence of biasing transition probabilities on a particular value at an utterance or sentence level rather than a word level, as provided in the claimed invention, but Russell further falls short in that the particular value upon which the dependence is based is disclosed as being rate of speech instead of a number of phonetic segments. As illustrated above, very different outcomes may result between biasing transition probabilities based on rate of speech versus the number of phonetic segments in a word or utterance. Accordingly, Russell fails to inherently disclose biasing the transition probabilities in dependence of the number of phonetic segments in an utterance. Gandhi is not related to biasing transition probabilities in dependence of anything, and thus does not cure this deficiency of Russell. Furthermore, Gandhi is not cited in such capacity. Thus, even if Gandhi was sufficient to cure the admitted deficiency of Russell with respect to operation at a word level, the combination of Gandhi and Russell still fails to teach or suggest any biasing of transition probabilities in dependence of a number of phonetic segments.

Additionally, even if one assumes for the sake of argument that Russell discloses all aspects of the claimed invention except that the biasing of transition probabilities is based on an estimated number of phonetic segments in a word, Gandhi still fails to cure this deficiency since Gandhi is directed to speaker verification and describes computing a likelihood score for each word in a sentence. In other words, Gandhi discloses the computation of a score based on a particular model. To the contrary, the claimed invention biases transition probabilities which indicate whether to change models instead of calculating a score for any particular model. Thus, Gandhi has nothing to do with biasing transition probabilities based on an estimated number of phonetic segments in a word. Accordingly, even if one were to assume that Russell disclosed biasing the transition probabilities in dependence of the number of phonetic segments in an utterance (an assumption with which Applicants expressly disagree), a combination of the disclosure of Gandhi would merely result in biasing transition probabilities at an utterance level with a separate likelihood score determined for each word in the utterance.

Thus, for all the reasons above, Applicants respectfully submit that Russell and Gandhi, taken either alone or in combination, fail to teach or suggest biasing the transition probabilities in dependence of the number of phonetic segments in the word as recited in independent claim 29. James, Bergstrom, Gupta '278", Gupta '095, Ueyama and Schwartz also fail to teach or suggest the above recited feature and are not cited as such. Since each of the cited references fail to teach or suggest the aforementioned features of independent claim 29, any combination of the cited references also fails to teach or suggest the subject matter of independent claim 29. Thus, the cited references, taken either individually or in combination, do not anticipate, or render independent claim 29 obvious. Independent claims 13, 27 and 39 include substantially similar subject matter to that of independent claim 29 with respect to biasing the transition probabilities and thus independent claims 13, 27 and 39 are patentable for at least the reasons given above for independent claim 29. Claims 14-16, 18-25, 28, 30-38 and 40 depend either directly or indirectly from corresponding ones of independent claims 13, 27, 29 and 39, and thus include all the recitations of their corresponding independent claims. Therefore, dependent claims 14-16, 18-25, 28 and 30-40 are patentable for at least those reasons given above for independent claims 13, 27, 29 and 39.

Appl. No.: 10/020,895
Filed: December 19, 2001
Amdt. Dated 05/21/2007

Accordingly, for all the reasons stated above, Applicants respectfully submit that the rejections of claims 13-16, 18-25 and 27-40 are overcome.

Newly Added Claims

Applicants have added new claim 41 to more particularly define aspects of the present application. The new claim includes no new matter and is fully supported by the specification and the drawings of the present application.

Accordingly, it is believed that the new claim is in condition for allowance.

CONCLUSION

In view of the the remarks presented above, it is respectfully submitted that all of the claims are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested in due course. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



Chad L. Thorson
Registration No. 55,675

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

ELECTRONICALLY FILED USING THE EFS-WEB ELECTRONIC FILING SYSTEM OF THE UNITED STATES PATENT & TRADEMARK OFFICE ON MAY 21, 2007.
LEGAL02/30369322v1